

Algebra Review for Final

- ① Find the equation of the line passing through the points $(16, 0)$ $(12, 8)$.
- ② Find the equations of the lines parallel to and perpendicular to the line in problem #1 and passing through the point $(2, 3)$

③ Solve for x

① $6x - 3 = 39$

② $3x - 7 = 5x + 1$

③ $6x - 4(3x + 8) = 16$

④ $7 - 3(2x - 5) = 1 - x$

⑤ $5(x - 2) - 14x = -3x - (5 - 4x)$

④ Find the equation for the tables below

①

| x | 1 | 2 | 3 | 4 | 5 |
|---|----|----|----|---|---|
| y | -8 | -5 | -2 | 1 | 4 |

②

| x | 1 | 2 | 3 | 4 | 5 |
|---|----|----|---|---|----|
| y | 17 | 12 | 7 | 2 | -3 |

⑤ Given triangle $\triangle WHY$ with the following coordinates, $W(0,0)$, $H(8,3)$, $Y(2,9)$, find the equation of the perpendicular bisector of \overline{HY} .

⑥ Solve the following systems

$$\textcircled{a} \begin{cases} y = -2x + 2 \\ 6x + 2y = 3 \end{cases}$$

$$\textcircled{b} \begin{cases} -4x + 3y = 3 \\ 7x - 9y = 6 \end{cases}$$

$$\textcircled{c} \begin{cases} 5x - y = -1 \\ 15x = 2y \end{cases}$$

$$\textcircled{d} \begin{cases} x + 2y = 3 \\ 2x - y = 16 \end{cases}$$

⑦ Multiply

Ⓐ $(x+3)(2x-4)$

Ⓑ $(3x-5)(x+7)$

⑧ Factor

Ⓐ $x^2 + 8x + 15$

Ⓑ $x^2 - 10x - 24$

⑨ Solve for x

Ⓐ $x^2 + 5x + 4 = 0$

Ⓑ $x^2 + 7x = 30$

(10) Multiply and simplify

(a) $\sqrt{3} \cdot \sqrt{2}$

(b) $3\sqrt{6} \cdot 2\sqrt{3}$

(c) $7\sqrt{3} \cdot 7\sqrt{3}$

(d) $\sqrt{5} \cdot \sqrt{8}$

(11) Solve for b

(a) $P = 2b + 2h$

(b) $a^2 + b^2 = c^2$

(12) Solve for x

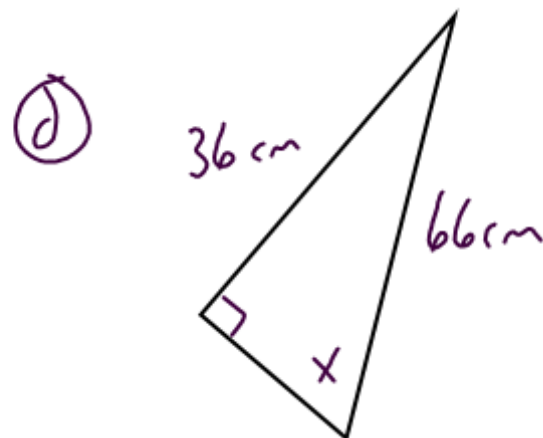
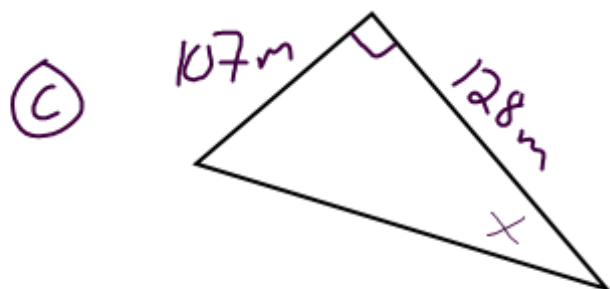
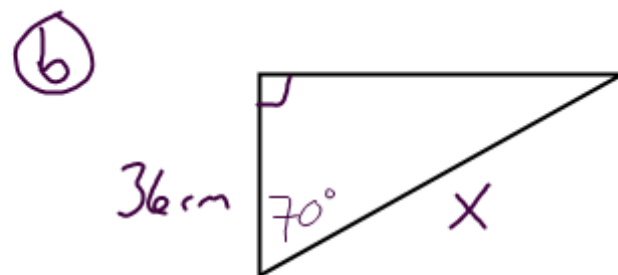
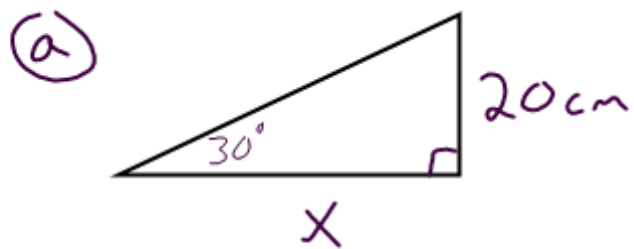
$$\textcircled{a} \quad \frac{7}{21} = \frac{x}{18}$$

$$\textcircled{b} \quad \frac{20}{13} = \frac{60}{x}$$

$$\textcircled{c} \quad \frac{x}{5} = \frac{x+3}{20}$$

$$\textcircled{d} \quad \frac{x-1}{2x+3} = \frac{4}{13}$$

(13) Solve for x



Answers

① $y = -2(x-16)$ or $y = -2(x-12)+8$ or $y = -2x+32$

② $y = -2(x-2)+3$ parallel
 $y = \frac{1}{2}(x-2)+3$ perpendicular

③ a $x=7$ b $x=-4$ c $x=-8$ d $x=4.2$ e $x=-\frac{1}{2}$

④ a $y=3x-11$ b $y=-5x+22$

⑤ $y=x+1$

⑥ a $(-\frac{1}{2}, 3)$ b $(-3, -3)$ c $(\frac{2}{5}, 3)$ d $(7, -2)$

Answers cont.

⑦ a $2x^2 + 2x - 12$

b $3x^2 + 16x - 35$

⑧ a $(x+3)(x+5)$

b $(x-12)(x+2)$

⑨ a $x = -4, -1$

b $x = -10, 3$

⑩ a $\sqrt{6}$

b $6\sqrt{18} \Rightarrow 18\sqrt{2}$

c $49\sqrt{9} \Rightarrow 147$

d $\sqrt{40} \rightarrow 2\sqrt{10}$

⑪ a $b = \frac{p-2h}{2}$

b $b = \pm\sqrt{c^2 - a^2}$

⑫ a $x = 6$

b $x = 3a$

c $x = 1$

d $x = 5$

⑬ a $x \approx 35$

b $x \approx 105$

c $x \approx 40^\circ$

d $x \approx 33^\circ$